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Entitled

Sweeper Stand and Guard System and Method

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SWEEPER STAND AND GUARD SYSTEM AND METHOD

Background of the Invention

The present invention generally relates to cleaning devices and storage and stand systems for such devices and, more particularly, relates to stands and guards for bristles of brooms and sweeper implements.

5 Conventionally, brooms and the like having bristles are retained when not in use either via a hook or hanging prong against a wall and raised from the floor or otherwise merely stood against a wall or corner with bristles against the floor supporting the device. It is inconvenient and also often damaging to have to fix a hook or hanging prong in a wall or other vertical surface for storage and retention of brooms and the like. On the
10 other hand, if these brooms and the like are merely stored by leaning the handle against a surface with the bristles on the floor supporting the device, the bristles bend and become deformed with the passage of time.

Brooms and other bristle devices have not previously incorporated any mechanism

or feature that permits stand-alone storage in an upright position. It would be convenient and advantageous to provide mechanisms for storage of the devices in a manner that permits up-right, stand-alone location and yet does not support via the bristles in a way that deforms or bends the bristles. Bristle life is limited if the bristles support the broom
5 or device in upright position, such as when storage involves leaning the device against a wall or corner with bristles against the floor supporting the device. Fraying and bending of the bristles, as well as other deformity and damage, occurs. Hanging elements for broom devices mark and scar walls and also are inconvenient in retrieval and storage of the devices and in requirements for disposing and placing the hanging elements.

10 It would, therefore, be a significant improvement in the art and technology to improve cleaning implements, such as brooms and the like having bristles, to provide for upright, stand-alone storage without any further requirements of hanging prongs or without bristle deformation. It would also be a significant improvement in the art and technology to provide features directly to the cleaning implement, for permitting the
15 upright, stand-alone storage and protection of bristles from damage or harms. The present invention provides numerous advantages and improvements, including improvements and nuances in the foregoing respects.

Summary Of The Invention

An embodiment of the invention is a system for cleaning. The system includes a
20 handle, a head connected to the handle, and a stand incorporated with the head, for selectively supporting the system in upright position.

Another embodiment of the invention is a broom. The broom includes a handle, a

head connected to the handle, and bristles connected to the head. The broom also includes a support slidably engaged with the head. The the support is selectively extendable from the head beyond an extent of the bristles.

Yet another embodiment of the invention is an implement. The implement
5 includes a handle and a feature connected to the handle. The implement also includes a stand for retaining the implement with the feature suspended.

Another embodiment of the invention is a method of storing a broom. The method includes fixing a stand to the broom head and locating the broom on the stand, with bristles of the broom suspended from providing any significant support.

10 Yet another embodiment of the invention is a broom. The broom includes a handle, bristles connected to the handle, and a guard for shielding the bristles.

Another embodiment of the invention is a method of storing a broom. The method includes standing the broom on a guard that protrudes beyond the bristles of the broom and supports the broom in upright freestanding position without supporting force
15 on the bristles.

Brief Description Of The Drawings

The present invention is illustrated by way of example and not limitation in the accompanying figures, in which like references indicate similar elements, and in which:

FIG. 1 illustrates a side perspective view of a system for sweeping, incorporating a
20 stand, according to certain embodiments of the invention;

FIG. 2 illustrates a side perspective view of the system of Fig. 1, incorporating the stand, and showing, in phantom, the incorporation of the stand with the head and bristles

of the head, with the stand retracted so as not to interfere with the bristles in use of the system for cleaning operations, according to certain embodiments of the invention;

FIG. 3 illustrates a side perspective view of the system of Figs. 1 and 2, incorporating the stand, and showing, in phantom, the incorporation of the stand with the head and bristles, with the stand in an extended implementation for storage of the system in upright freestanding position on the stand, according to certain embodiments of the invention;

FIG. 4 illustrates a side perspective view of an alternative system for sweeping, incorporating a shroud in retracted position so as not to interfere with bristles in cleaning operations, according to certain embodiments of the invention;

FIG. 5 illustrates a side perspective view of the alternative system of Fig. 4, incorporating the shroud in extended position for storage of the system in upright freestanding position on the shroud, according to certain embodiments of the invention;

FIG. 6 illustrates a side perspective view of another alternative system for sweeping, incorporating dual wings in retracted position so as not to interfere with bristles in cleaning operations, according to certain embodiments of the invention;

FIG. 7 illustrates a side perspective view of the alternative system of Fig. 6, incorporating the dual wings in extended position for storage of the system in upright freestanding position on the wings, according to certain embodiments of the invention;

FIG. 8 illustrates a side perspective view of another alternative system, incorporating a cross support, extendable for storage in upright standing position and retractable for sweeping operations, according to certain embodiments of the invention;

FIG. 9 illustrates a side view of a broom incorporating a stand of the type of Figs. 1-3, and including an along tube within a handle for effecting extension and retraction of the stand, according to certain embodiments of the invention; and

Fig. 10 illustrates a side view of another broom incorporating a stand and an
5 alternative mechanism for retaining the stand in retracted and extended position, including a ribbed collar for slidable engagement of the stand with the handle, according to certain embodiments of the invention.

Detailed Description

Referring to Fig. 1, a system 100 includes an elongate handle 102, a head 104, and
10 bristles 106 maintained by or formed in the head 104. The handle 102 is connected to the head 104. The head 104 is connected to the bristles 106. The system 100 stands upright, with the bristles 106 maintained just at or from the underlying planar surface (in the Figure), such as the floor.

The head 104 is formed with an opening 108. The opening 108 passes through
15 the head 104, as will hereinafter be further explained.

Within the opening 108 is retained a stand 110. The stand 110 has at least three prongs or projections that can extend downward (in the Figure) to beyond the extent of the bristles 106. The stand 110 rests on an underlying planar surface (in the Figure), such as a floor, and allows the system 100 to freely stand upright, as shown in the Figure. In
20 the upright, freestanding position of the system 100, the bristles 106 are raised above the underlying planar surface (or, otherwise, reside just on the surface without any significant

weight of the system 100 being supported by the bristles 106). The stand 110 supports the system 100 in the upright, freestanding position.

The stand 110 is movable vertically (in the Figure) in the discretion of a user of the system 100, such that the stand 110 is either extended downward to support the system 100 or otherwise the stand 110 is retained vertically upward in the head 104 and
5 permitting the bristles 106 to adequately touch a surface, such as a floor, during use in sweeping and the like. The stand 110, as retained in the head 104, provides an integral support for the system 100 for use in storing the system 100 in upright position, without the bristles 106 being employed to support the system 100. The bristles 106 are, thus, not
10 deformed or damaged in storage.

Referring to Fig. 2, a system 200 is substantially like the system 100 of Figure 1, showing the stand 110 in unactuated position, as when the system 200 is employed for sweeping and cleaning via the bristles 106. The head 104 of the system 200 is similar to a conventional head of a broom or other cleaning implement including bristles and the
15 like. However, the head 104 is not the same as any convention broom head. Particularly, the handle 102 connects to the head 104, and the head 104 connects to bristles 106. Integral to the head 104 is the opening 108. The opening 108 is vertically elongated (in the Figure). The vertical elongation of the opening 108 permits a stand 110 to move vertically within the opening 108.

20 The stand 110 has a cross piece 110a that passes through the opening 108, to each side of the head 104. The cross piece 110a connects with dual lateral arms 110b, 110c extending planarly to an underlying surface, such as a floor, and planarly consistent with

the configuration of the bristles 106 (e.g., if the bristles are slanted or configured with a degradation with respect to the underling surface, the dual lateral arms 110b, 110c are similarly situated and formed to extend beyond the bristles when the stand 110 is actuated for storage of the system 200). At the extended ends of the dual lateral arms 110b, 110c, 5 the arms 110b, 110c form prongs or projections. These prongs or projections can serve for touching an underlying surface during storage of the system 200, as hereinafter further described.

Although not shown in detail in Fig. 2, the stand 110 includes elements within the head 104 (or otherwise) to retain the stand 110 in either an extended or non-extended 10 state. For example, dual sponges on either side of the cross piece 110a, and within the opening 108 and the head 104, can selectively crimp the cross piece 110a in desired position of extension or non-extension of the stand 110. A wide variety of other and further retention means are possible, with each being employed in the system 200 in order to selectively retain the cross piece 110a such that the stand 110 is either extended or non- 15 extended.

Referring to Fig. 3, a system 300 is substantially like the system 200 of Fig. 2, except that the stand 110 is in extended position, such as for when the stand 110 is employed to store the system 300 in an upright, freestanding manner on an underlying surface, such as the floor. The system 300 includes the handle 102 connected to the head 20 104, and the head 104 connected to the bristles 106.

Within the head 104 is retained the stand 110 with the cross piece 110a passing through the opening 108 of the head 104. As shown in the Figure, the stand 110 is

extended because the cross piece 110a is located at the vertically downward-most extent of the elongation of the opening 108. In this extended state of the stand 110, the dual lateral arms 110b, 110c of the stand 110 extend beyond the vertically downward-most extent of the bristles 106. The prong or projection extensions of the stand 110 provide a
5 four-point frame for locating and maintaining the system 300 in upward, freestanding position atop an underlying surface, such as the floor.

Because the system 300 rests on the prongs or projections formed by the dual lateral arms 110b, 110c, the bristles 106 do not bear the weight of the system 300 when standing in position shown in the Figure. This protects the bristles and prevents
10 deformation and damage to the bristles when storing the system 300. Additionally, the stand 110 relieves any requirement of ancillary support or handling mechanisms for storage of the system 300.

Referring to Fig. 4, an alternative system 400 includes a handle 102, a head 404 and bristles 406. The system 400 also includes a shroud 410 around edges of the head
15 404 and sufficiently wide to pass downward and over the bristles 406. The handle 102 is connected to the head 404, and the head 404 is connected to the bristles 406. The shroud 410 is slidably engaged with the head 404, in order that the shroud 410 can be positioned un-extended as in Figure 4 (or, alternatively, pushed downward to extend downwardly beyond the extent of the bristles 406 for upright freestanding storage of the system 400 as
20 hereinafter further explained.

Referring to Fig. 5, an alternative system 500 is substantially like the system 400 of Fig. 4, except that the shroud 410 is extended and outwardly surrounds the bristles 406.

The system 500 includes the handle 102 connected to the head 404, the head 400 connected to the bristles 406, and the shroud 410 slidably engaged with the head 404.

The shroud 410 is pushed downwardly from the state shown in Fig. 4, to extend downwardly beyond the bristles 406 as shown in Fig. 5. The system 500 is freely standable in upright position (in the Figure) on the shroud 410. The shroud 410 rests and supports the system 500 on an underlying planar surface, such as the floor. This permits storage of the system 500, with the bristles 406 protected from force against the underlying surface and also from other external factors, in the upright and freestanding position.

Referring to Fig. 6, a further alternative system 600 includes dual wings 610a, 610b. The system 600 includes the handle 102 connected to a head 604, and the head 604 connected to bristles 606. The dual wings 610a, 610b are connected to the head 604 at each lateral extent of the head 604, by respective hinges 612a, 612b. The wings 610a, 610b are maintained in position against the head 604 (as shown in the Figure), when the system 600 is employed in cleaning and the bristles are used for brushing or sweeping.

Referring to Fig. 7, a system 700 is like the system 600 of Fig. 6, except that the wings 610a, 610b are positioned, via downward swinging of the wings 610a, 610b at the hinges 612a, 612b. The wings 610a, 610b are each of slightly greater extent than the extent of the bristles 606, when the wings 610a, 610b are so deployed as shown in Fig. 7. The wings 610a, 610b are of sufficient width to support the system 600, when so deployed, in a freestanding upright position. This protects the bristles 606 from bearing the brunt of support of the system 700.

Referring to Fig. 8, another alternative system 800 includes the handle 102, a head 804 connected to the handle 102, and bristles 806 connected to the head 804. A cross support 810 is maintained by the head 804. The cross support 810 forms perpendicular extensions. The extensions, when deployed and extended, extend beyond the extent of the bristles 806. The cross support 810 is slidably engaged with the head 804. An opening 808 of the head 804 retains a pin 814 connected to the cross support 810. The pin 814 can be selectively vertically moved (in the Figure) within the opening 808, in order to extend or retract the cross support 810 from extension beyond the extent of the bristles 806. As shown in the Figure, the cross support 810 is extended to provide an upright freestanding configuration, for supporting the system 800 on an underlying planar surface, such as the floor, when the system 800 is stored. Via the pin 814 moved upward in the opening 808, the cross support 810 is retracted, such that the bristles 806 extend beyond the cross support 810 and are accessed for cleaning operations.

In operation of the foregoing systems, the stands or supports of the systems are retracted when the broom is employed in cleaning operations. For example, the stand or support is retained upwardly within or in connection with the broom head, in order that the bristles are available for sweeping on a floor or other surface. In such upward retention, the stands or supports do not significantly interfere with operations and effects of the bristles in sweeping.

When sweeping operations are completed and the broom is to be stored, the stands or supports are extendably engaged in the head, such that the stands or supports extend beyond the extent of the bristles. Then, the stands or supports provide supporting

surfaces on which to place the broom. Thus, when the broom is not in use, the stands or supports maintain the broom in an upright freestanding state, without any significant support or force on the bristles of the broom. But, when the broom is in use for cleaning operations, the stands or supports are retracted and do not interfere with or affect the
5 typical cleaning usage.

Referring to Fig. 9, an alternative system 900 includes a handle 902 connected to a head 904. The head 904 is connected to bristles 906. The head 904 includes an opening 908. Within the opening 908, the stand 110 substantially of the type of Figs. 1-3 is incorporated. The stand 110, however, includes or is connected to an elongate tube 920
10 at the cross piece 110a. The tube 920 extends centrally within the handle 902 and to an elongate port 922 formed in the handle 902. At the port 922, the tube 902 includes or is connected to a pin 924. The pin 924 is slidable within the port 922, either up or down in the Figure, in order to retract or extend, respectively, the stand 110. When the pin 924 is located at the upward-most of the port 922, the stand 110 is retracted such that the stand
15 110 does not interfere with the bristle 902 operations in sweeping and cleaning. When the pin 924 is located at the downward-most of the port 922, the stand 110 is extended such that the stand 110 extends beyond the extent of the bristles 902. The extended stand 110 supports the system 900 in upright freestanding position, such as in storage of the system 900.

20 Referring to Fig. 1000, yet another system 1000 includes the handle 102, a head 1004, and bristles 1006. The handle 102 is connected to the head 1004, and the head 1004 is connected to the bristles 1006. The system 1000 further includes the stand 110.

The stand 110, unlike the stand 110 of Figs. 1-3, is connected to or affixed with a collar 1010. The collar 1010 extends, for example, from the cross piece 110a of the stand 110. The collar 1010 slidably protrudes from the head 1004, along the handle 102. The handle 102 is connected with a ribbed outer sleeve 1020, over which the collar 1010 is slidably
5 positioned. The ribbed outer sleeve 1020 retains the collar 1010, and thus the stand 110, in retracted or extended position vis-à-vis the head 1004 and the bristles 1006. By force, the collar 1010 is selectively positioned and retained via friction with the ribbed outer sleeve 1020 in order to desirably retain the stand 110 in extended or retracted position. In extended position, the stand 110 supports the system 1000 in upright freestanding
10 manner. In retracted position, the bristles 1006 can be employed in sweeping and cleaning operations, without interference of the stand 110.

In the foregoing specification, the invention has been described with reference to specific embodiments. However, one of ordinary skill in the art appreciates that various modifications and changes can be made without departing from the scope of the present
15 invention as set forth in the claims below. Accordingly, the specification and figures are to be regarded in an illustrative rather than a restrictive sense, and all such modifications are intended to be included within the scope of the present invention.

Benefits, other advantages, and solutions to problems have been described above with regard to specific embodiments. However, the benefits, advantages, solutions to
20 problems and any element(s) that may cause any benefit, advantage, or solution to occur or become more pronounced are not to be construed as a critical, required, or essential feature or element of any or all the claims. As used herein, the terms "comprises,

"comprising," or any other variation thereof, are intended to cover a non-exclusive inclusion, such that a process, method, article, or apparatus that comprises a list of elements does not include only those elements but may include other elements not expressly listed or inherent to such process, method, article, or apparatus.